

In the Claims

Please withdraw claims 1, 3, 16 and 17 in favor of a continuing application.

Please replace claims 5-15, 19, 20 and 22-25 with the following amended claims:

1. (Withdrawn) A detectable label comprising a glass particle doped with at least one rare earth element, the glass particle further providing a unique identification code adapted to identify a functional group attached thereto, wherein the functional group is selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme, and wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof, and

whereby the particle has a diameter of between 10 microns and 100 microns.

2. (Cancelled) The label of claim 1, wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof.

3. (Withdrawn) The label of claim 1, wherein the particle includes a plurality of rare earth elements arranged in a pattern or array to provide the unique identification code for the particle.

4. (Cancelled) The label of claim 3, wherein the label is adapted to detect an analyte in a sample or interaction of two molecules.

5. (Currently amended) A detectable label comprising a glass particle doped with at least one rare earth element, the glass particle further providing a unique identification code to identify a functional group attached thereto, wherein the functional group is

selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme, and wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof, and

whereby the particle has a diameter of between 10 microns and 100 microns; the particle includes a plurality of rare earth elements arranged in a pattern or array to provide the unique identification code for the particle; and ~~The label of claim 3, wherein the particle includes a glass microparticle having a pattern of rare earth elements shutter masked thereon.~~

6. (Currently amended) A detectable label comprising a glass particle doped with at least one rare earth element, the glass particle further providing a unique identification code to identify a functional group attached thereto, wherein the functional group is selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme, and wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof, and

whereby the particle has a diameter of between 10 microns and 100 microns; the particle includes a plurality of rare earth elements arranged in a pattern or array to provide the unique identification code for the particle; and ~~The label of claim 3, wherein the particle is a fiber having a cross-section including an array of~~ layers, each of the layers having an optical property different from an optical property of adjacent layers.

7. (Original) The label of claim 6, wherein the fiber includes materials selected from the group consisting of inorganic materials, glasses, polymers and combinations thereof.

8. (Original) The label of claim 6, wherein the layers are arranged concentrically.
9. (Original) The label of claim 6, wherein the layers are arranged across a cross section of the fiber.
10. (Original) The label of claim 9, wherein one of the layers varies in thickness from the other layers.
11. (Original) The label of claim 8, wherein one of the concentric layers varies in thickness from the other layers.
12. (Original) The label of claim 6, wherein the layers are arranged concentrically, and each concentric layer has a spectral emission different from the spectral emission of adjacent concentric layers.
13. (Original) The label of claim 6, wherein the particle is made from glass, the layers are arranged across a cross section of the fiber and at least one of the layers has a spectral emission different from the spectral emission of the other layers in the particle.
14. (Previously amended) The label of claim 6, wherein the particle includes a chemical functional group attached thereto for interaction with an analyte or biomolecule.
15. (Original) The label of claim 14, wherein the particle includes a surface treatment to facilitate binding or attachment of biomolecules thereto.

16. (Withdrawn) The label of claim 1, wherein the particle includes a surface treatment to facilitate binding or attachment of biomolecules thereto.

17. (Withdrawn) The label of claim 3, wherein the label includes the functional group attached thereto for interaction with an analyte or biomolecule.

18. (Cancelled) The label of claim 17, wherein the chemical functional group is selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme.

19. (Previously amended) The label of claim 6, wherein the layers are arranged in a manner that can be used to identify the functional group.

20. (Original) The label of claim 6, wherein the particle includes a chemical or biological functional group attached thereto for interaction with the analyte.

21. (Cancelled) The label of claim 20, wherein the chemical functional group is selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme.

22. (Previously amended) The label of claim 6, wherein the layers are arranged in a manner that can be used to identify the functional group.

23. (Original) The label of claim 22, wherein the fiber is made from glass, and the layers are doped with elements selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof.

24. (Original) The label of claim 6, wherein the fiber has a cross-sectional dimension of less than 1 millimeter.

25. (Currently amended) The label of claim 63, wherein the particle is derived from a cross-section plurality of fibers arranged in a bundle, and at least one of the fibers including a rare earth dopant different from the rare earth dopant contained in at least one of the other fibers in the bundle.